

UNITED STATES DISTRICT COURT

**DISTRICT OF NEW JERSEY
CAMDEN VICINAGE**

**IN RE PAULSBORO
DERAILMENT CASES**

:
:
:
:
:
:

**MASTER DOCKET NO.:
1:13-CV-784 (RBK/KMW)**

**Plaintiffs' Reply Brief in Support of their
Motion to Exclude the Expert Report and
Opinions of Defendants' Experts Schulman and DesAutels**

TABLE OF CONTENTS

TABLE OF AUTHORITIES.....	ii
I. INTRODUCTION.....	1
II. ARGUMENT.....	1
A. The Exponent experts’ opinions are not based on valid science and thus they are unreliable.....	1
B. The Exponent experts’ modeling opinion regarding immediate movement of vinyl chloride out of Paulsboro contradicts valid science and visual proof	3
C. Dr. Georgopoulos’s declaration is proper support for Plaintiff’s motion to exclude the opinion of the Exponent experts.....	8
III. CONCLUSION.....	13

TABLE OF AUTHORITIES

<i>Crowley v. Chait</i> , 322 F. Supp. 2d 530 (D.N.J. 2004).....	11
<i>Haskins v. First American Title Ins. Co.</i> , 2013 WL 5410531 (D.N.J. Sept. 26, 2013).....	10
<i>Oddi v. Ford Motor Co.</i> , 234 F.3d 136 (3d Cir. 2000).....	10
<i>Pritchard v. Dow Agro Sciences</i> , 263 F.R.D. 277 (W.D. Pa. 2009).....	12

I. INTRODUCTION

As Plaintiffs noted in their opening brief on this motion, Schulman and DesAutel's "methodology" is characterized by "cherry picking" -- arbitrarily using data they view as helpful to their outcome while simply disregarding relevant, necessary data that would refute their desired conclusions. Such unabashed selectiveness is openly on display in Defendants' brief opposing this motion. Because the Exponent experts' opinions are not supported by good grounds, they should be excluded from evidence.

II. ARGUMENT

A. The Exponent experts' opinions are not based on valid science and thus they are unreliable

Defendants fundamentally err by using their own experts' blatantly incorrect opinions as the basis for demonstrating that those opinions have scientific validity. An example of their flawed approach is Defendants' characterizing as "absurd" Plaintiffs' contention that buildings, houses, and trees kept the vinyl chloride from dispersing away from Paulsboro. *See* Defs' brief at 9. They cite Dr. Schulman's testimony that if the Exponent experts had factored those obstructions into their analysis, the concentrations of vinyl chloride in Paulsboro would have been even lower. *Id.* at 9-10. But Dr. Shulman is plainly wrong about that. His assertion contradicts established scientific facts as well as the accumulated empirical knowledge of emergency responders in near-ground accidental releases of

chemicals. Standard relevant guidance documents, such as the "Emergency Responders' 'Rules of Thumb' for Air Toxics Releases in Urban Environments" prepared by the Los Alamos National Laboratory, describe trapping effects that are caused by buildings - and that lead to the potential for higher exposures rather than for plume dilution:

The locally measured wind may not match large-scale wind due to building-induced circulation. This is called apparent wind anomalies. For winds nearly face-on to the building wall, concentrations of hazardous material can build-up in between buildings and take a relatively long time to flush out (agent trapping in vortices). Recessed entryways or architectural alcoves may trap and hold air contaminants for some time after the plume has passed by ...

See Supplemental Declaration of Panos G. Georgopoulos ("Georgopoulos Supp. Dec.") (attached), at ¶ 2 and Exhibit A.

Further, even if airborne concentrations had been lower in certain spots locally, these lower levels would have persisted longer, and would thereby have led to *higher* potential exposure. Additionally, because the Exponent experts claim the buildings have a dilution effect, they also must concede that the buildings have a transport/dispersion delaying effect, and thus that the scenario of the entire vinyl chloride cloud moving through and leaving Paulsboro in just 10 minutes cannot possibly be valid. Georgopoulos Supp. Dec. at ¶ 4. Dr. Schulman actually

conceded that buildings trap higher concentrations, but he contends they “bleed off quickly because air is not stagnant.” Significantly, the fact that air is not stagnant shows that Schulman has applied his “bleed off” theory selectively, only to the town of Paulsboro, and not to vinyl chloride above the Mantua creek, because consistent application would preclude him from being able to express his desired opinion. Georgopoulos Supp. Dec. at ¶ 4.

B. The Exponent experts’ modeling opinion regarding immediate movement of vinyl chloride out of Paulsboro contradicts valid science and visual proof

Next, the claim of the Exponent experts that “[t]he METAR data used by Dr. Georgopolous was, in fact, a degraded snapshot version of the ASOS wind data,” Defs’ brief at 12, is simply wrong. The METAR data represent a globally accepted international standard (*see, e.g.,* www.gosic.org/wdcmnet/us-metar (last visited July 27, 2015)) and the Quality Assured 2-minute-averaged METAR wind speeds are always accompanied by information on gusts (occurring during the last 10 minutes before the hour), wind-shifts (during the entire hour), peak winds (above a threshold), and other Quality Assured information that provides an integrated picture of the meteorological conditions relevant to the reporting period. *See* Georgopoulos Supp. Dec. at Exhibit E (pages from the Federal Meteorological Handbook that are specific to the wind measurements included in the METAR data). The User’s Guide for the U.S. Department of Defense Hazard Prediction and

Assessment Capability (HPAC) system, which relies on SCIPUFF for the calculation of atmospheric dispersion of chemical releases, explicitly specifies usage of the METAR data. *See, e.g.,* ftp://ftp.atdd.noaa.gov/pub/gunter/hpac_404_users_manual.pdf (last checked July 27, 2015) (*Defense Threat Reduction Agency, 2004, HPAC 4.04 Users Manual*, pp. 590, 754-770).

Dispersion of pollutants in the atmosphere is governed by two distinct mechanisms: (1) mean air flow that transports the pollutants downwind (“advection”), and (2) turbulent velocity fluctuations that disperse the pollutants in all directions (“turbulent diffusion”). *See* Georgopoulos Supp. Dec. at ¶ 5. One can roughly view the mean air flow (mean wind speed) as the “signal” and the turbulent velocity fluctuations as the “noise” associated with the signal.

Wind speeds less than 1.5 m/s to 2 m/s (approximately 3 to 4 knots) are universally considered to be “low,” often referred to as Low Wind Speed (LWS) conditions, and under such conditions there is no dominant direction for the transport and dispersion of the pollutant. *Georgopoulos Supp. Dec. at ¶ 6.* Under LWS conditions the spread of airborne pollutants can be dominated by turbulent diffusion and takes place in all directions, i.e. “downwind,” lateral, and even “upwind” with respect to the light mean wind. This is the situation that obtained at Paulsboro during the morning of 11/30/2012, in the hours immediately following

the incident. The fact that the 2-min wind speed averages are "noise" (fluctuations) rather than "signal" is corroborated by the inconsistency in simultaneous observations at various monitors in the region. *See* Georgopoulos Supp. Dec. at ¶ 6.

The Paulsboro area is considered a "gently rolling" terrain that properly fits within the resolution Dr. Georgopoulos used in the SCIPUFF model, in conjunction with terrain-following coordinates. The Exponent experts have unreasonably exaggerated the impact of the terrain elsewhere in the area (Mantua Creek) while maintaining it does not play a significant role in the case of the KPHL monitor.

Consistent with the Exponent experts' theme of cherry-picking to support their "methodology," they assume that a differential of 36 feet in terrain elevation (height above sea level) plays absolutely no role when it comes to assigning boundary conditions to their modeling domain but that much smaller height differentials have a critical effect in other instances, specifically the Mantua Creek. Georgopoulos Supp. Dec. at ¶ 13.

Defendants further misrepresent Dr. Georgopoulos's methodology, asserting that he claims all weather stations he input to the SCIPUFF model were used equally. But any diagnostic-flow field model uses some type of distance-related weighting to account for the effect of proximity of different observations in relation to interpolated flow fields at any particular location; the inverse-distance-squared approximation that Defendants describe on page 13 of their brief is merely one such

option used in SCIPUFF. However, the reason measurements at multiple air monitoring stations are needed is to properly account for the consistency of regional air flow patterns that affect the dispersion of released chemicals. A thorough qualitative analysis requires the simultaneous consideration and evaluation of other factors beyond merely the distance between monitors and locations, such as the presence of hills, towns, large water bodies – a flowing river, etc. An established, consistent wind magnitude and direction diminishes the differential in interpolated values caused by distance-related weights, such as when calm conditions are reported at multiple stations – *e.g.* for the first hours following the Paulsboro derailment. Measurements conducted under conditions of “light and variable” fluctuating winds do not “translate” directly to locations away from the monitor; the stochastic character of the atmosphere at such locations must be taken into account, which results in turbulent dispersion predominating over advective transport of airborne chemicals. *See* Georgopoulos Supp. Dec. at ¶13. Dr. Georgopoulos considered and evaluated not only METAR data but also available short-term averaged data in reaching the conclusion that the consistent regional picture provided by METAR measurements was appropriate for modeling the dispersion of vinyl chloride across the Paulsboro area during the morning of 11/30/2012. *See* Georgopoulos Supp. Dec. at ¶ 11.

Defendants also misrepresent Dr. Georgopoulos's statements regarding the effects of the flow of the Delaware River on the wind present near ground at Paulsboro. Defendants claim that "the Delaware River current issue raised by Plaintiff is not relevant because the dense gas was not released over the Delaware River." Defs' brief at 14. The fact is that the presence and flow of the Delaware River *do* affect and change both wind magnitude and direction near ground between KPHL and Paulsboro (or Mantua Creek) and this fact is ignored in the analysis performed by the Exponent experts (especially with respect to directional change). *See* Georgopoulos Supp. Dec. at ¶ 14.

As for the Exponent experts' tacking on the additional .5 knots to the wind speed, which they explain as 'truncation,' it was not methodologically sound for them to do so. Defendants refer to the document "AERMINUTE User's Instructions," the guide accompanying EPA's AERMINUTE code for processing the ASOS data for AERMET. These codes are intended for use primarily with AERMOD (or possibly similar codes) that are not applicable to situations like the Paulsboro incident. *See* Georgopoulos Supp. Dec. at ¶ 15. The input requirements for performing regulatory modeling with AERMOD or similar codes that are models that cannot handle low wind speeds and are not applicable to situations like the Paulsboro incident. *See id.* More appropriate guidance for these types of

situations is provided in, *e.g.*, *Defense Threat Reduction Agency, 2004, HPAC 4.04 Users Manual*, cited *supra*. Georgopoulos Supp. Dec. at ¶ 15.

Defendants offer a series of convenient explanations for the wildly shifting pattern they contend the vinyl chloride took because of the wind. *See* Defs’ brief at 18-19. Unsurprisingly, Defendants’ “Ripley’s Believe It or Not” explanation results in all of the vinyl chloride having been blown away from Paulsboro almost immediately. And rather than concede that the camera doesn’t lie, the Exponent experts insist that *their model*, with its methodological flaws, makes sense of everything. But their dismissive treatment of the observational evidence erases any prospect that rational science supports their claim of the vinyl chloride cloud behaving in such an erratic manner, purportedly resulting in vinyl chloride not being present for more than 10 minutes at any Paulsboro location. *See* Georgopoulos Supp. Dec. at ¶ 16.

C. Dr. Georgopoulos’s declaration is proper support for Plaintiff’s motion to exclude the opinion of the Exponent experts¹

Dr. Georgopoulos’s declaration is a standard declaration opposing Defendants’ *Daubert* motion, and by no measure is it an expert report or supplemental expert report. Nevertheless, being well aware that expert declarations are perfectly

¹ It is also proper opposition to Defendants’ motion to exclude the opinion of Dr. Georgopoulos, wherein Defendants initially raised the matter in their reply brief, after Plaintiff had filed Dr. Georgopoulos’s declaration.

appropriate and permissible in connection with *Daubert* motions, Defendants have characterized the declaration as a supplemental expert disclosure so that they can attempt to force-fit the declaration into Rule 26(e) and the court's scheduling order and claim Plaintiffs have somehow violated the rule and the order. Defendants' attempt should be rejected.²

Defendants argue that Dr. Georgopoulos's declaration is actually a supplemental expert report. *See* Defs' brief at 5-6.³ They note that the declaration: (1) contains an excerpt from a 2009 article by Geiger et al.; and (2) attaches Dr. Schulman's deposition transcript (Schulman's deposition had not yet been taken when Plaintiffs served Dr. Georgopoulos's expert report). Defs' Georgopolous reply brief at 3. Defendants also argue that Plaintiffs' *brief* opposing their motion to exclude Dr. Georgopoulos's opinion somehow itself is a supplemental expert report (even though it was not signed by Dr. Georgopoulos). *Id.* Strangely, Defendants contend that Plaintiffs' brief opposing Defendants' motion to exclude Dr. Georgopoulos is itself a supplemental expert report because it contains information that corroborates

² Plaintiff notes that Defendants have not invoked any proper procedure for requesting that the court strike or exclude Dr. Georgopoulos's declaration, but have only argued in *Daubert* briefs that the declaration ought not to be considered. Plaintiff will nevertheless address Defendants' substantive arguments.

³ *See also* Defs' brief in support of their motion to exclude the expert opinion of Dr. Georgopoulos, at 3 (hereafter "Defs' Georgopoulos reply brief").

Dr. Georgopoulos’s methodology and “impermissibly criticizes Defendants’ experts’ methodologies.” *Id.* Plaintiffs’ opposition brief also references Dr. Georgopoulos’s declaration, and cites supporting scientific articles and treatises. *Id.* at 4.

Significantly, while claiming that Dr. Georgopoulos’s declaration “improperly injects new grounds” in support of his opinion, Defendants simultaneously assert that the declaration merely “rehashes his methodology and conclusions and criticizes Defendants’ experts.” Defs’ brief at 6.⁴ Defendants, by rote, assert baldly that “such a tactic” “unfairly prejudices” them. *Id.*

The Third Circuit has made clear that in determining the admissibility of expert evidence, it is proper for the court to consider not just experts’ reports, but also declarations or affidavits, testimony, documents, learned treatises, and legal argument. *Oddi v. Ford Motor Co.*, 234 F.3d 136, 154 (3d Cir. 2000). In *Haskins v. First American Title Ins. Co.*, 2013 WL 5410531 (D.N.J. Sept. 26, 2013), Magistrate Judge Schneider explained the appropriate use of expert materials:

Rebuttal cannot be used to correct a party's oversights in its case-in-chief. An expert's rebuttal report should be stricken if it contains new opinions or information which contradicts the expert's initial report, but need not be

⁴ Defendants’ position is internally inconsistent; one cannot “inject *new* grounds” with a “*rehash[ing]*” of “methodology and conclusions.” See Defs’ brief at 12 (emphasis added).

stricken if it contains merely “an elaboration of and [is] consistent with an opinion/issue previously addressed” in the expert's initial report. *Pritchard v. Dow Agro Scis.*, 263 F.R.D. 277, 284–85 (W.D. Pa. 2009). The Third Circuit has noted that there is no “bright line rule” whereby every expert opinion “must be included in a preliminary report, or forever be precluded.” *Hill v. Reederei F. Laeisz G.M.B.H., Rostock*, 435 F.3d 404, 423 (3d Cir. 2006) (finding no error in lower court's admission of expert rebuttal testimony exceeding scope of expert's original report). While the applicable case law prohibits an expert from using rebuttal as a “do-over” of an original report, courts have refrained from “automatically exclud[ing] anything an expert could have included in his or her original report.” *Crowley*, 322 F.Supp.2d at 551; *see also, Reichold, Inc. v. U.S. Metals Ref. Co.*, No. 03–453, 2007 WL 1428559, at *13 (D.N.J. May 10, 2007) (reversing magistrate judge's ruling denying plaintiff's use of supplemental report, explaining that the report “address[ed] an important issue on which [expert] did not have the data to opine at the time of his original report.”).

2013 WL 5410531, at *2.

Magistrate Judge Schneider found *Crowley v. Chait*, 322 F. Supp. 2d 530 (D.N.J. 2004), to be particularly instructive. *Id.* at *3. He noted that in *Crowley*, the plaintiff submitted a transcript submitted in response to the defendants' expert's report criticizing the methodology used by the plaintiff's expert. *Id.* The plaintiff's expert had not cited the transcript in her original report, and the defendants' argued she should be barred from using the transcript in her rebuttal report. *Id.* The *Crowley* court found the defendants' theory to be “substantially more narrow than

the Third Circuit's," because rebuttal evidence "need only 'repel' the other expert's testimony." *Id.*

Pritchard v. Dow Agro Sciences, 263 F.R.D. 277 (W.D.Pa. 2009), which *Crowley* cited, involved an expert's rebuttal declaration that cited a particular study showing an association between chlorpyrifos and non-Hodgkin's lymphoma, but which the expert had not cited in his expert report. *Id.* at 285. The court noted that an expert declaration should only be stricken if it contains *new opinions* or information that *contradicts* the original expert report, but not where it is consistent with an opinion or issue previously addressed, and elaborates on or amplifies that opinion or issue. *Id.* at 284-85. Such is the case with Dr. Georgopoulos's declaration.

The use of expert declarations in connection with *Daubert* motions is standard practice. Here, it is readily apparent that the cause for Defendants' consternation is not that Dr. Georgopoulos offers new or contradictory evidence, because he does not, but rather that Plaintiff's position is even stronger in light of the additional *consistent* citations and amplification contained in Dr. Georgopoulos's declaration and Plaintiff's briefing. This is not a basis on which to exclude an expert declaration. *Pritchard*, 263 F.R.D. at 287 ("It is clear that Dr. Omalu's statements in the declaration are consistent with the opinions set forth in his expert report and during his deposition. Moreover, they are also presented for the purpose of rebutting

the defense experts' opinions. Accordingly, the Court will not strike these opinions.''). Defendants' arguments should thus be rejected.

III. CONCLUSION

For all of the reasons given above, the expert evidence of Schulman and DesAutels should be excluded.

DATED: July 31, 2015

Respectfully submitted:

/s/ Joseph Alan Venti
Mark R. Cuker, Esq.
Joseph Alan Venti, Esq.
WILLIAMS CUKER BEREZOFSKY
210 Lake Drive East, Suite 101
Cherry Hill, NJ 19102

Counsel for Plaintiffs

CERTIFICATE OF SERVICE

I certify that on today's date a true and correct copy of Plaintiffs' reply brief in support of their motion to exclude the testimony of Schulman and DesAutels was electronically filed with the Court's CM/ECF system, which will accomplish service of same on all counsel of record.

Dated: July 31, 2015

/s/ Joseph Alan Venti
Joseph Alan Venti, Esq.